

REMARKS

Introduction

In response to the Office Action dated August 29, 2008, Applicants have amended claim 1. Support for amended claim 1 is found in, for example, Figs. 4-6 and Para. [0049]. Care has been taken to avoid the introduction of new matter. Claims 6-35 have been withdrawn pursuant to a restriction requirement. In view of the foregoing amendments and the following remarks, Applicants respectfully submit that all pending claims are in condition for allowance.

Election/Restriction

The restriction is traversed because it is improper. Contrary to the Examiner's assertions, the different groups do *not* lack unity of invention, and are linked so as to form a single inventive concept under PCT Rule 13.1. According to PCT Rule 13.1, the unity of invention requirements will be fulfilled if there is a technical relationship among the inventions involving one or more of the same or corresponding special technical features. There is such a technical relationship among the inventions in the present application.

The Examiner, however, alleged that the Groups lack the corresponding technical feature. The Office Action stated:

The two groups of apparatus are *totally independent*. Fig. 4 describes the independency very clearly. Part number 600 is the laser peening apparatus and specification [Para.] (*sic*) [0061] describes that 'a laser peening apparatus 600 has a main unit 610 (laser irradiating device) for irradiating the laser and a tank 660 in which a work piece 200 is located.' Further specification [Para.] (*sic*) [0062] describes that 'the main unit 610 has a laser oscillator 620, an output adjusting device 630, a shutter 640, and a lens 650. The tank 660 containing water 680 as the liquid through which the laser is transmitted is equipped with a window 670 located on the side and a two-axis moving table.' (*emphasis added*)

The Examiner concludes that the laser peening apparatus does not need a rotor for functioning. The Examiner contends that a rotor is an intended use in claim 26 and a product-by-process in claim 1. The Examiner concludes that method Groups II and IV contain independent subject matter. The Examiner concludes that the methods are not applicable for only those apparatus. The Examiner opines that the apparatus *can* be applied for different subjects, materials, or steps.

Whether or not the claims *can* be distinct and whether an apparatus *can* be operated in a different manner is **not** relevant in a restriction requirement under the Unity of Invention standard.

As explained in the MPEP § 1893.03(d):

When making a lack of unity of invention requirement, the examiner must (1) list the different groups of claims and (2) ***explain why each group lacks unity with each other group*** (i.e., why there is no single general inventive concept) specifically describing the unique special technical feature in each group (*emphasis added*).

The Examiner merely alleged that Groups I and III lack unity because they are “totally independent.” The Examiner alleged that Groups II and IV lack unity because they are independent. The Examiner also alleged that the methods are not applicable for the apparatus, however, failed to address why each method Group lacks unity with each of the remaining groups. The Examiner only compared Group I with Group III and Group II with Group IV. Therefore, the Examiner failed to address why **each** group lacks unity with **each** other group.

Thus, the Examiner has *not* shown that the Groups lack a **single general inventive concept** where there is a technical relationship among the inventions **that involves at least one common or corresponding special technical feature**, as required when imposing a restriction in an application filed under 35 U.S.C. § 371.

Claim 1 requires a rotor using an electrical steel sheet with low iron loss having a bridge side on an inner circumference of a magnet insertion window of the rotor. The strength of the bridge side is improved by means of applying a laser peening of irradiating the inner circumference of the magnet insertion window at an angle relative to the inner circumference of the magnet insertion window with a laser through a liquid.

Claim 6 requires manufacturing a rotor using an electrical steel sheet with low iron loss, which includes applying a laser peening of irradiating with a laser through a liquid a bridge side on an inner circumference of a magnet insertion window of the rotor to improve a strength of the bridge side.

Claim 15 requires irradiating a rotor made of a low iron loss electrical steel sheet with a laser through a liquid, which includes irradiating with the laser a bridge side on an inner circumference of a magnet insertion window of the rotor while moving the rotor relative to an irradiation spot (S) of the laser to improve a strength of the bridge side.

Claim 26 requires a laser peening apparatus with a laser irradiating device for irradiating a rotor made of low iron loss magnetic steel with a laser through a liquid and a drive device for moving the rotor relative to an irradiation spot (S) of the laser such that the laser irradiates the rotor along a bridge side of an inner circumference of a magnet insertion window of the rotor.

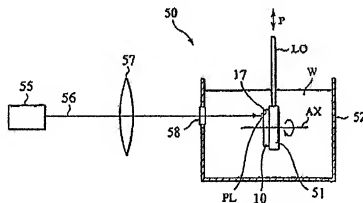
Clearly claims 1, 6, 15, and 26 all share a corresponding special technical feature. The Examiner has not shown that these corresponding special technical features are disclosed in the prior art. Thus, this restriction is improper, and claims 6, 15, and 26 should be rejoined and examined.

Claim Rejection Under 35 U.S.C. § 102

Claims 1-3 are rejected under 35 U.S.C. § 102(b) as being anticipated by US Pub. No. 2003/0201685 to Shimada et al. ("Shimada"). Applicants traverse.

An aspect of amended claim 1 is a laser that is irradiated on the inner circumference of the magnet insertion window at an angle relative to the inner circumference of the magnet insertion window. Thereby, as taught in the instant specification, the shock wave caused by the plasma generation does not directly influence the surface of the rotor (*see, e.g.,* Para. [0047] of originally filed specification). Since the influence of the laser peening on the surface of the rotor is restrained, even on the surface of the rotor having an insulation layer thereon, the deterioration of insulation layer is decreased.

Shimada describes that the laser is orthogonally irradiated on the surface of an electrical steel sheet. As shown in Fig. 4 of Shimada and depicted below, the area 17 is directly affected by a shock wave when the Nd:YAG laser 55 emits and irradiates a green laser pulse and plasma PL occurs at the surface of the electrical steel sheet 10. Therefore, the area is directly affected by a shock wave caused by the generation of plasma.



Furthermore, Shimada is *silent* about the radiating direction of the laser, as required by amended claim 1.

In addition, an aspect of the claimed subject matter includes stacking a plurality of rotors together since the laser is irradiated on the inner circumference of the magnet insertion window from an oblique direction, which improves the productivity while reducing the production cost.

Shimada fails to disclose or suggest, at a minimum, "...means of applying a laser peening of irradiating the inner circumference of the magnet insertion window at an angle relative to the inner circumference of the magnet insertion window with a laser through a liquid," as recited in amended claim 1.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently (noting that "inherency may not be established by probabilities or possibilities," *Scaltech Inc. v. Retec/Tetra*, 178 F.3d 1378 (Fed. Cir. 1999)), in a single prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986), based on the forgoing, it is submitted that Shimada does not anticipate amended claim 1, nor any claim dependent thereon. The dependent claims are allowable for at least the same reasons as claim 1.

Claim Rejection Under 35 U.S.C. § 103

Claims 4 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shimada in view of US Pub. No. 2002/0114824 to Fukui et al.

Dependent claims 4 and 5 are allowable for at least the same reasons as independent claim 1, and further distinguish the claimed rotor.

Withdrawal of the foregoing rejections is respectfully requested.

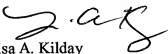
Conclusion

In view of the above amendments and remarks, Applicants submit that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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